SEQUENCE LISTING

(1) GENERAL INFORMATION: (i) APPLICANT: Bannwell, John (ii) TITLE OF INVENTION: Plasmodium vivax Blood Stage Antigens, Monoclonal Antibodies, and Diagnostic Assays (iii) NUMBER OF SEQUENCES: 2 (iv) CORRESPONDENCE ADDRESS: (A) ADDRESSEE: Darby and Darby (B) STREET: 805 Third Ave. (C) CITY: New York (D) STATE: New York (E) COUNTRY: USA (F) ZIP: 10022-7513 (v) COMPUTER READABLE FORM: (A) MEDIUM TYPE: Floppy\disk (B) COMPUTER: IBM PC compatible (C) OPERATING SYSTEM: PC\DOS/MS-DOS (D) SOFTWARE: PatentIn Release #1.0, Version #1.25 ľħ (vi) CURRENT APPLICATION DATA: (A) APPLICATION NUMBER: US (B) FILING DATE: LЦ (C) CLASSIFICATION: đ (viii) ATTORNEY/AGENT INFORMATION: (A) NAME: Gogoris, Adda ្នើ (B) REGISTRATION NUMBER: 29,714 ru (C) REFERENCE/DOCKET NUMBER: 5986/07686 ļ. (Ex) TELECOMMUNICATION INFORMATION: (A) TELEPHONE: (212)527-7700 (B) TELEFAX: (212)753-6237 (C) TELEX: 236687 (2) INFORMATION FOR SEQ ID NO:1: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 3337 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: double (D) TOPOLOGY: linear (ii) MOLECULE TYPE: DNA (genomic) (iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE:\NO

(vi) ORIGINAL SOURCE:

(A) ORGANISM Plasmodium vivax

(vii) IMMEDIATE SOURCE:
(B) CLONE: PVMB3.3.1

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

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GAATTCCGGT	AAAGTAACAA	CTATGGTTTC	GTATCTATAT	ATAACCTTAC	TAATTTTATC	60
TTTTGCTTTT	СТТТТААТТС	ATGCTTCAAC	AGTAAGATAA	AAATAATCTA	TAAAAACTGC	120
TATATATACA	TATATATTCA	TAAGTGGCAT	TTGTGAATTG	CGATCATTTA	AATTTACGTA	.180 brooks and 0.81c.
AAAACAATAT	TGAAAAAAT	TTTTTTTTT	$\mathbf{T}\mathbf{T}\mathbf{T}\mathbf{T}\mathbf{T}\mathbf{T}\mathbf{T}\mathbf{T}\mathbf{T}$	TGTTCTACAG	AACGATTTAG	240
AATTGGAAAA	TGCTTCTGAT	GATGTTGTAG	AGGTGGAGGA	TCCTTCAAAC	GACGGTTTAG	300
AATTAGAAGA	GGAAAATTTT	GATGAGAATT	CAGGTGATGA	TGAAACTCTT	TTAGATGCTA	360
CCCCÇ&AAGA	TGACTTTGCC	TTAACAGATT	TGCAATTGA	AGACGATGAG	GAAGTCAACG	420
AAACÇTTAGA	TGGAGGTGAA	TCATTAGGAG	AGGTTTCCAC	TGAAGATATG	GAAACAGAAG	480
ATGGÇTCAAC	AGATGATACG	GAAACAGAAG	AAGGACTACC	TGGTGATATG	GAAGGAGAAG	540 .
AAGAÅGCTGG	CGATATGGAA	GCAGGGGAAG	AAGCTGGTGA	TTTGGAAGCA	GGGGAAGAAA	600
CTGGÇÇATTT	GGAAGCAGGG	GAAGAAACTG	GCGATTTGGA	AGCAGGGGAA	GAAGCTGGTG	660
ATTTĢĒAAGC	AGGGGAAGAA	ACTGGCGATT	TGGAAGCAG	GGAAGAAACT	GGAGATGCGG	720
AAAC¶GAAGA	AGGAGCAACT	GGAGATGCGG	AAACTGAAAA	TGGAGCAACT	GTGTATGTAG	780
ACACAGAAGA	TAGTTCAGCT.	GATGGAGCAG	AAAAAGTACA	TOTTCCTGCT	CAAGAAAATG	840
TACAACCTGC	CGATAGTAAT	GATGCCCTCT	TTGGAAGTAT	TTTGGATAAA	GATATAATTT	900
TTGATCATAT	TAAAGATTTC	GAGCCACTAT	TCGAACAAAT	тетессеет	ACTGCTÀAAC	960
ATGTTACGGG	ACAAGAATTG	CCAATGAAAC	CTGTACCATT	ACCAGTGGCA	GAAGAGCCCG	1020
CGCAAGTACC	AGCGGAAGAA	TTAGATGCCA	CTCCAGAGGA	TGACTTCGCA	TTAGATGTTA	1080
CAGAATCTCC	CGAGGAAGTA	GAATTAGTAT	TAGATGAAGA	GGCAACTGAA	GAAGAATCAA	1140
CGGAAGTGGG	ACCAACGGAA	GAAGGACCAA	CCGAAGAATT	AGATGCCACT	CCAGAGGATG	1200
GATTTCGCAT	TAGACGAAAC	TGCAGAAGGA	GAAACAGAAG	AAACGTAGAG	GAGAAGAAA	1260
CAGAAGAAGC	TGCAGAAGGA	GAAGTATCAG	AAGAAACTCC	AGAAGGAGAA	GAAGAGTTAG	1320
	TTTTGCTTTT TATATATACA AAAACAATAT AATTGGAAAA AATTAGAAGA AATTAGAAGA AAACGTTAGA AAACGTTAGA AAGAAGCTGGGATTT ATTTGGAAGA AAACGGAAGA AAACGGAAGA ACACAGAAGA TACAACCTGC TTGATCATAT ATGTTACGGG CGCAAGTACC CAGAATCTCC CAGAAGTGGG GATTTCGCAT	TTTTGCTTTT CTTTTAATTC TATATATACA TATATATTCA AAAACAATAT TGAAAAAAAT AATTAGAAGA TGCTTCTGAT AATTAGAAGA GGAAAATTTT CCCCCGAAGA TGACTTTGCC AAACGTTAGA TGGAGGTGAA ATGGCTCAAC AGATGATACG AAGATGCTGG CGATATGGAA CTGGCGATTT GGAAGCAGGG ATTTGGAAGA AGGAGCAACT TACAACCTGC CGATAGTAAT TTGATCATAT TAAAGATTTC ATGTTACGGG ACAAGAATTG CGCAAGTACC AGCGGAAGAA CAGAATCTCC CGAGGAAGAA CAGAATCTCC CGAGGAAGAA CAGAATCTCC CGAGGAAGAA CAGAATCTCC CGAGGAAGAA CAGAATCTCC CGAGGAAGAA CAGGAAGTGG ACCAACGGAA GATTTCGCAT TAGACGAAAC	TTTTGCTTT CTTTTAATTC ATGCTTCAAC TATATATACA TATATATTCA TAAGTGGCAT AAAACAATAT TGAAAAAAAT TTTTTTTTT AATTGGAAAA TGCTTCTGAT GATGTGTAG AATTAGAAGA GGAAAATTTT GATGAGAATT CCCCCGAAGA TGACTTTGCC TTAACAGATT AAACGTTAGA TGGAGGTGAA TCATTAGGAG ATGGCTCAAC AGATGATACG GAAACAGAAG AAGAGCTGG CGATATGGAA GCAGGGGAAG ATTTGGAAGC AGGGGAAGAA ACTGGCGATT AAACTGAAGA AGGAGCAACT GGAGATGCGG ACACAGAAGA TAGTTCAGCT GATGGAGCAG TACAACCTGC CGATAGTAAT GATGCCCTCT TTGATCATAT TAAAGATTTC GAGCCACTAT ATGTTACGGG ACAAGAATTG CCAATGAAAC CGCAAGTACC AGCGGAAGAA TTAGATGCCA CAGAATCTCC CGAGGAAGAA TTAGATGCCA CAGAATCTCC CGAGGAAGAA GAAGGACCAA GATTTCGCAT TAGACGAAAC TGCAGAAGGA GATTTCGCAT TAGACGAAAC TGCAGAAGGA	TTTTGCTTT CTTTTAATTC ATGCTTCAAC AGTAAGATAA TATATATACA TATATATTCA TAAGTGGCAT TTGTGAATTG AAAACAATAT TGAAAAAAAT TTTTTTTTT TTTTTTTTT AATTGGAAAA TGCTTCTGAT GATGAGAATT CAGGTGAGGA AATTAGAAGA GGAAAATTTT GATGAGAATT CAGGTGATGA CCCCCGAAGA TGACTTTGCC TTAACAGATT TGCCAATTGA AAACGTTAGA TGGAGGTGAA TCATTAGGAG AGGTTTCCAC AAGAGTCAAC AGATGATACG GAAACAGAAG AAGGACTACC AAGAGTCAC AGATGATACG GAAACAGAAG AAGCTGGTGA ATTTGGAAGA AGGGAAGAA ACTGGCGATT TGGAAGCAGA ATTTTGGAAGAAC AGGGGAAGAA ACTGGCGATT TGGAAGCAGG AAACAGGAAGA AGGACAACT GGAGATGCGG AAACTGAAAA ACACAGGAAGA TAGTTCAGCT GATGGAGCAG AAAAAGTACA TACAACCTGC CGATAGTAAT GATGCCCTCT TTGGAAGTAT ATGTTACGGG ACAAGAATTG CCAATGAAAC CTGTACCATT ATGTTACGGG ACAAGAATTG CCAATGAAAC CTGTACCATT CGCAAGTACC AGCGGAAGAA TTAGATGCCA CTCCAGAGGA CAGAATCTCC CGAGGAAGTA GAATTAGTAT TAGATGAAGA CGGAAGTGCG ACCAACGGAA GAAGGACCAA CCGAAGAATT CGGAAGTGCG ACCAACGGAA GAATTAGTAT TAGATGAAGA CAGGAATCTCC CGAGGAAGTA GAATTAGTAT TAGATGAAGA CGGAAGTGCG ACCAACGGAA GAAGGACCAA CCGAAGAATT CAGACGAAC TTAGACGAAC CCGAAGAATT CCGCAAGTGCG ACCAACGGAA GAAGGACCAA CCGAAGAATT CAGACGAAC TTAGACGAAC CCGAAGAATT CAGACGAAC TTAGACGAAC CCGAAGAATT CAGACGAAC TTAGACGAAC CCGAAGAATT CAGACGAAC TTAGACGAAC CCGAAGAATT CCGCAAGTGCG ACCAACGGAA GAATTAGGTAT TAGATGAAGA CTGTTCCCAT TAGACGAACC TGCAGAAGGA GAAACAGAAG	TTTTGCTTT CTTTTAATTC ATGCTTCAAC AGTAAGATAA AAATAATCTA TATATATACA TATATATTCA TAAGTGGCAT TTGTGAATTG CGATCATTTA AAAACAATAT TGAAAAAAAT TTTTTTTTTT TTTTTTTTTT	TTGATCATAT TAAAGATTC GAGCCACTAT TCGAACAAAT TGTGGCGGGT ACTGCTAAAC ATGTTACGGG ACAAGAATTG CCAATGAAAC CTGTACCATT ACCAGTGGCA GAAGAGCCCG CGCAAGTACC AGCGGAAGAA TTAGATGCCA CTCCAGAGGA TGACTTCGCA TTAGATGTTA CAGAATCTCC CGAGGAAGTA GAATTAGTAT TAGATGAAGA GGCAACTGAA GAAGAATCAA CGGAAGTGGG ACCAACGGAA GAAGGACCAA CCGAAGAATT AGATGCCACT CCAGAGGATG GATTTCGCAT TAGACGAAAC TGCAGAAGGA GAAACAGAAG AAACGTAGAG CGAGAAGAAA

CTGCAGAAGG AGAAGAAACC GTAGAGGGGA AAGAAACCGT AGAGGGAGAA GAAACCGTAG AGGGAGAAGA AGCGCAGAA AGGAGAAGA AGCTCCAGAAG GATGACTTCC 1500 AATTAGAAGA ACCATCAGGA GAAGAAGAAG GAGAGAAGA GAGAGAGAAG ACCATCAGGA GAAGAGAGAAG GAGAGAGAAG ACCATCAGGA GAAGAGAGAAG 1560 AGAAACCGTT AGTAGAGGT CCAGTAGTGG CCAGAACCGGT AGAAGTAGTG ACTCCTGCTC 1620 AGCCTGTCAA ACCAATGGTC GCTCCAACGG CAGATGAAAC TTTATTCGTT GATATCTTAG 1680 ATAACGATTT AACGTATGCA GACATTACAT CCTTTGAGCC ATTATTTAAA CAAATCCTCA 1740 AGGATCCTGA TGCAGGAGGA GCCTGTAACAG TACCATCAAA GGAAGCACCT GTACAAGTAC 1880 ACGATTACCA ACGAGAGAGA ACCCAACGGA ACCCACAGAA GACAGCACCT GTACAAGAGG 1860 ACGATTACCA ATTAGAAGGA ACCCACAGAA GACAACCGAA ACCCAACGGAA ACCCACAGAA GACAACCGAA GACAACCGAA ACCCACAGAA GACAACGAAA ACCCACAGAA GAAAACCCTA ATTAGAAGGA ACCCACAGAA GAAGAGCACA ACCCACAGAA GACAACCGAA GACAACCGAA ACCCACAGAA GAAAACCCTA ACCCACAGAA GAAAACCCTA ACCCACAGAA GACAACGAAA ACCCACAGAA GAAAACCCTA ACCCACAGAA GACAACCGAA ACCCACAGAA GAAAACCCTA ACCCACAGAA GACAACGAAA ACCCACAGAA GAAAACCCTA ACCCACAGAA GACAACCACA ACCAACAGAA GACACCCCA ACCACAGAA GACAACCAGAA GACACCCGAA ACCCACAGAA GACACCCCA ACCACAGAA GCACAACGAA ACCACACAGAA GACACCCCAC ACCACAGAA GCAGAAGAAC CCAACCAGAA GACACACCAGAA GACACCCCAC ACCACAGAA GACACCCCAC ACCACAGAA GACACCCCAC ACCACAGAA GCACACAGAA GACACCCCAC ACCACAGAA GACACCCCAC ACCACAGAA GACACCCCAC ACCACAGAA GACACCCCAC ACCACAGAA GACACCCCAC ACCACAGAA GACACCACA ACCACAGAAG GACACCCCCC ACCACACAAA ACCACACAGAA GAACACCCCAC ACCACACAAA ACCACACAGAA GAACACCCCAC ACCACCAGAA GAACACCCAC ACCACCAGAA GAACACCCAC ACCACCAGAA GAACACCACA ACCACACAGAA GAACACCACA ACCACACAAA GAACACCACA ACCACACAGAA GAACACCACA ACCACACAAA GAACACCACA ACCACACAAA ACCACACAAA GAACACCACA ACCACACAAAA GAACACCACA ACCACAACAAA GAACACCACA ACCAACAAAA GAACACCACA ACCAACAAAA GAACACACAA ACCAAACAAA	AGGCAACTCC AGAGGATGA	TTCGCATTAG	ATGGAACTAC	ATTAGAAGAA	ACCGAAGAAA	1380
ARTTAGARGA ACCATCAGGA GAAGGAGAAG GGGAAGGAGA AGGAGAAGG GAAGGAGAAG 1560 GAGAAGCGTT AGTAGCAGTG CCAGTAGTGG CCGAACCGGT AGAAGTAGTG ACTCCTGCTC 1620 AGCCTGTCAA ACCAATGGTC GCTCCAACGG CAGATGAAAC TTTATTCGTT GATATCTTAG 1680 ATAACGATTT AACGTATGCA GACATTAGAT CCTTTGAGCC ATTATTAAAA CAAATCCTCA 1740 AGGATCCTGA TGCAGGAGA GCTGTAACAG TACCATCAAA GGAAGCACCT GTACAAGTAC 1800 CAGTGGCAGT AGGGCCCGCG CAAGAAGTGC CAACGGAAGA ATTGATGCAA CTCCAAGAGG 1860 ACGATTTCGA ATTAGAAGGA ACTGCAGAAG CTCCAGAGAG AGGAGAATTA GTATTAGAAG 1920 GAGAAGGAGA ACTACAGGAA GAGAGGCCAA GAGAAGGAGA GCCAACAGAA GGAGAACTGC 1980 CAGAAGGAGA ATTGAAGGCA ACTCCAGAGG ACGATTTCGA ATTAGAAGAA CCAACAGGAG 2040 AACAAGGAGA ATTGAAGGCA ACTCCAGAGG ACGATTTCGA ATTAGAAGAA CCAACAGGAG 2100 TACCTGCAGAA AGTAGAAGAA GTGGAAGAG TACCTCAGAAG AGGAGAAGAA GTGGAAGAGG 2100 TACCTGCAGAA AGTAGAAGAA GTGGAAGAG TACCTCAGAA AGGAGAAGAA GTGGAAGAGG 2100 TACCTGCAGAA AGTAGAAGAA GTGGAAGAG TACCTCAGAA AGTAGAAGAA GTGGAAGAGG 2100 TACCTGCAGAA AGTAGAAGAA GAAGTGGAAA AGTAGAAGAA AGTGGAAGAG GTACCAGAAG 2220 AAGATGGAAGA AGTAGAAGAA GAAGTGGAAA AACTGCAGA AGAAGTAGAA GTGGAAGAG 2220 AAGATGGAAGA GAGACTGGAA GAAGTGGAAA AACTGCAGA AGAAGTAGAA GAAGAAGAG 2220 AAGATGGAAGA GAGACTGGAA GAAGTGGAAA AACTGCAGA AGAAGAGAA GAAGAAGAG 2240 AAGATGCAAGA AGAAGTGGAA GAAGTGGAAA AACTGCAGA GAAGAAGAA GAAGAAGAG 2240 AAGAACCAGA AGAAGTAGAA GAAGTGGAA GAAGTAGAAGA AACATCGGAA GAAGAAGAG 2240 AAGAACCAG AGAACTGGAA GAAGTGGAA GAAGTAGAAG AACATGGAA GAAGAAGAG 2240 AACTACCAGA ACCAAAGAAA GAAGTATAC AACATCGGAA GAAGAAGAG 2240 AACATCAGAA ACCAAAGAAA GAAGAGAAG AAGAAGAAG AAGAAGAGA GAAGAA	CTGCAGAAGG AGAAGAAACG	: GTAGAGGGAG	AAGAAACCGT	AGAGGGAGAA	GAAACCGTAG	1440
AGAGAGGGTT AGTAGCAGTG CCAGTAGTGG CCGAACCGGT AGAAGTAGTG ACTCCTGCTC 1680 AGCCTGTCAA ACCAATGGTC GCTCCAACGG CAGATGAAAC TTTATTCGTT GATATCTTAG 1680 ATAACGATTT AACGTATGCA GACATTACAT CCTTTGAGCC ATTATTAAA CAAATCCTCA 1740 AGGATCCTGA TGCAGGAGAG GCTGTAACAG TACCATCAAA GGAAGCACCT GTACAAGTAC 1800 CAGTGGCAGT AGGGCCCGCG CAAGAAGTGC CAACGGAAGA ATTGATGCAA CTCCAAGAGG 1860 ACGATTTCGA ATTAGAAGGA ACTGCAGAAG CTCCAGAGGA AGGAGAATTA GTATTAGAAGGA 1920 CAGAAGGAGA ACCAACGGAA GAAGAGCCAA GAGAAGGAGA GCCAACAGAA GGAGAAGTGC 1980 CAGAAGGAGA ATTAGAAGGA ACTCCAGAGG ACGATTTCGA ATTAGAAGAA CCAACAGGAG 2040 AACAAGAAGAA AGTAGAAGAA GTGGAAGGA AAACCGCAA AGGAGAAGAA GTGGAAGAGG 2100 TACCTGCAGAG AGTAGAAGAA GTGGAAGAG GTACCAGAA GTGGAAGAGA GTGGAAGAGG 2100 AACATGCAGAA AGTAGAAGAA GTGGAAGAG AAACCGCAGA AGGAGAAGAA GTGGAAGAGG 2100 AACATGCAGAA AGTAGAAGAA GAAGTGGAAG AACCGCAGA AGTAGAAGAA GTGGAAGAGG 2200 AACATGCAAGA AGTAGAAGAA GAAGTGGAA GAGATGAAGAA AGTAGAAGAA GTGGAAGAGG 2200 AACATGCAAGA AGTAGAAGA GAAGTGGAA GAGATGGAA AGTAGAAGAA GTGGAAGAGG 2200 AACATGCAAGA AGTAGAAGA GAAGTGGAA GAGATGGAAA AACTACAGAA GAAGTGGAA GAAGAAGAG 2220 AACATGCAAGA AGAAGTGGAA GAAGTGGAA GAAGTAGAAGA AACTACAGAA GAAGTAGAA GAAGAAGAG 2220 AACATGCAAGA AGAAGTGGAA GAAGTGGAA GAAGTAGAAG AACTACAGAA GAAGAAGAA GAAGAAGAG 2240 AACATACCAGA AGAAGTAGAA GAAGAGGTC CAGAAGAAGT ACCACGCGGTA GTAGAAGAGA 2240 AACATACCAGA AGAAGAAA GAAGAGATTAC AACTTAGAAGAA GAAGAAGAG 2240 AACATACCAGA ACCAAAGAAA GAAGAGATTAC AACTTAGAAGAA AACAAGAGA GAAGAAGAG 2240 AACATACCAGA ACCAAAGAAA GAAGAGATTAC AACTTAGAACAA AACAAAGAA AACAAAGAA AACAAATAAA GAACTTATGA AACAACAGAA AACAAATAAA GAACTTATGA AACAACAGA AAGAAATAAA GAACTTATGA AACAACAGAA AAGAAATAAA GAACTTAGA AACAAAGAA AAGAAATAAA GAACTTAGA AACAAAGAA AAGAAATAAA GAACTTAGA AACAAAGAA AAGAAATAAA GAACTAGGA AAGAAAAGAA	AGGGAGAAGA AGCTGCAGAA	GAGAAGAAG	AGTTAGAGGC	AACTCCAGAG	GATGACTTCC	1500
AGCCTGTCAA ACCAATGGTC GCTCCAACGG CAGATGAAAC TITATTCGTT GATATCTTAG ATAACGATTT AACGTATGCA GACATTAGAT CCTTTGAGCC ATTATTTAAA CAAATCCTCA 1740 AGGATCCTGA TGCAGGAGAG GCTGTAACAG TACCATCAAA GGAAGCACCT GTACAAGTAC 1800 CAGTGGCAGT AGGCCCGCG CAAGAAGTGC CAACGGAAGA ATTGATGCAA CTCCAAGAGG 1860 ACGATTCCGA ATTAGAAGGA ACTGCAGAAG CTCCAGAGGA AGGAGAATTA GTATTAGAAG 1920 GAGAAGGAGA ACCAACGGAA GAAGAGCCAA GAGAAGGAGA ACCAACAGAA GGAGAAGTGC 1980 CACAAGGAAGA ATTAGAAGCA ACTCCAGAGG ACCATTTCGA ATTAGAAGA CCAACAGGAG 2040 AAGAAGTAGA AGAAACCGTA GAGGGCGAAG AACTGCAGA AGGAGAAGAA CCAACAGGAG 2100 TACCTGCAGA AGTAGAAGAA GTGGAAGAG TACCTCAGA AGTAGAAGAA GTGGAAGAGG 2100 TACCTGCAGA AGTAGAAGAA GTGGAAGAG TACCTCAGA AGTAGAAGAA GTGGAAGAGG 2100 TACCTGCAGA AGTAGAAGAA GTAGAAGAA GAAGTGGAAG AGTAGAAGAA GTGGAAGAGG 2220 AAGATGCAGA AGTAGAAGAA GAAGTGGAAG AAGTAGAAGA AGTAGAAGAA GTGGAAGAGG 2220 AAGATGCAGA AGTAGAAGAA GAAGTGGAAA AAGTAGAAGA AGTAGAAGAA GTGGAAGAGG 2220 AAGATGCAGA AGTAGAAGAA GAAGTGGAAA AAGTAGAAGA AGTAGAAGAA GTGGAAGAGG 2220 AAGATGCAGA AGAAGTGGAA GAAGTAGAAG AAGTAGAAGA AGAAGTGGAA GAAGTACCAG 2280 AAGATGCAGC AGAAGTAGAA GAAGTAGAAG AAGTAGAAGA AGAAGTGGAA GAAGAAGAG 2240 AAGATGCAGC AGAAGAAAA GAAGTAGAAA GAAGAAGAA GAAGAAGAG 2240 AAGAACCAGA AGAAGAAA GAAGTAGAAA GAAGAAGAA GAAGAAGAG 2240 AAGAACCAGA AGAAGAAA GAAGTATAC CAGAAGAAGA AGAAGAAGAA GAAGAAGAG 2240 AACTACCAAGA CGTCCAAAG GAATTATAC AATTAGTAAT ACCATCGGAA GAAGAAGAG 2240 AACTACCAAGA AGAAGAAA GAAGTATTAC AATTAGTAAT ACCATCGGAA GAAGAAGAG 2250 AACTACCAAGA AGAATTAGA AAGGAAGAT CAAAATAAA AGAAACAGAAGAT 2250 GAAGACCAGA AGGACTGG GAACGATTAG AAGAAGAAGA AGAAACTGCA AGAAAAAGAA 2260 GAAGGCCTAGA AGGAAATAAA GAACAGGAGA AGGAACTTA CAAATCTAC AGAATAGACCT ACATTCATTC 2640 AAGGCCTAGA AGGAAATAAA GAACAGGAGA AGGACCTCC CTTAATTGAA AAACAGAGAT 2700 GGATGGAACA AAGAAATAAA GAACAGGAGA AGGACCCAGC TGGTTTGAGA AAACCAGAGAT 2700 GGAGCCGACGA CAAATGGAAA AAACGGAAA AAACGAGAGA AAAAAGGAA AAACGAGAGA AAACGA	AATTAGAAGA ACCATCAGGA	GAAGGAGAAG	GGGAAGGAGA	AGGAGAAGGG	GAAGGAGAAG	1560
ATTACGATTT AACGTATGCA GACATTACAT CCTTTGAGCC ATTATTAAA CAAATCCTCA AGGATCCTGA TGCAGGAGAG GCTGTAACAG TACCATCAAA GGAAGCACCT GTACAAGTAC 1800 CAGTGGCAGT AGGGCCCGCG CAAGAAGTGC CAACGGAAGA ATTGATGCAA CTCCAAGAGG 1860 ACGATTTCGA ATTAGAAGGA ACTGCAGAAG CTCCAGAGGA AGGAGAATTA GTATTAGAAGA 1920 GAGAAGGAGA ACCAACGGAA GAGAGCCAA GAGAAGGAGA GCCAACAGAA GGAGAAGTGC 1980 CAGAAGGAGA ATTAGAAGGA ACTCCAGAGG ACGATTTCGA ATTAGAAGAA CCAACAGGAG 2040 AAGAAGCAGA ATTAGAAGGA ACTCCAGAGG ACGATTTCGA ATTAGAAGAA CCAACAGGAG 2100 TACCTGCAGA AGTAGAAGAA GTGGAAGAGG TACCTCCAGA AGGAGAAGAA GTGGAAGAGG 2100 TACCTGCAGA AGTAGAAGAA GTAGAAGAA GTGGAAGAG 2220 AAGAAGCAGA AGTAGAAGAA GTACCCCCAG AAGTAGAAGA AGTGGAAGAG GTGCAAGAG 2220 AAGAAGCAGA AGTAGAAGAA GAAGTGGAAA AACTGCAGA AGAAGTGGAA GAGGTACCAG 2280 AAGAAGCAGA AGAACCGTA GAAGTGGAAA AACTGCAGA AGAAGTGGAA GAGGTACCAG 2280 AAGAAGCAGA AGAACTGGAA GAAGTAGAAG AAGTAGAAGA GAGGAAGAAG 2240 AAGAAGCAGA AGAACTGGAA GAAGTAGAAG AAGTAGAAGA GAGAAGAAG 2240 AAGAAGCAGA AGAACTGGAA GAAGTAGAAG AAGTAGAAG AAGAAGAAG AAGAAGAAG 2240 AAGAAGCAGA AGAAGTAGAA GAAGTAGAAG AAGTAGAAG AAGAAGAAG AAGAAGAAG 2240 AAGAACCAGA AGAAGAGAA GAAGTAGAAG AAGAAGAAG AAGAAGAAG AAGAAGAAG 2240 AAGAACCAGA AGAAGAGAA GAAGTATTAC AATTAGTAAT ACCATCGGAA GAAGAAGAG 2240 AACTACCAAGA CGTTCCAAAG GAATTATGG AAGAAGAAG AGAAACAGA GAAGAATATAC 2460 AATTAGACAA ACCAAAGAAA GACGAATTAG CCTCGGAAT TTTATCTATC ATCGACATCC 2520 ACTACCAAGA CGTTCCAAAG GAATTATGG AAGAAGAAGA AGAAACCAG GTGTATCCAT 2580 TGAAACCAGA AGATTTTGCA AAGGAAGAT CACAATCTAC AGAATCGCA GTGTATCCAT 2580 TGAAACCAGA AGATTTTGCA AAGGAAGAT CACAATCTAC AGAATCACA ACATTCATTC 2640 AAGGCCTAGA AGGAAATAAA GAAGAGATT GAAGAAGAA AGAAACGAGAT 2700 GGATGGAACA AAGAAATAAA GAATGGCTG GCTGGCTTCG CTTAATTCAA AATAAATGGT 2760 CAGAATTATAG TCAAATTCA ACAAAAGGAA AGGACCCAGC TGGTTTGAA AATAAATGGT 2760 CAGAACCACG AAATTGAA AAAAAGGAA AGGACCCAGC TGGTTTGAA AATAAATGGT 2760 CAGAACCACG AAATTGAAA AAAAAGGAA AAGAAAAGGAA AAACGAGAGT 2820 GGAGCGACCA GAAATGGAAA AAATGGTTTA AACCAAGAAG AAACCAAGAGT 2820	GAGAAGCGTT AGTAGCAGTC	CCAGTAGTGG	CCGAACCGGT	AGAAGTAGTG	ACTCCTGCTC	1620
AGGATCCTGA TGCAGGAGAG GCTGTAACAG TACCATCAAA GGAAGCACCT GTACAAGTAC 1800 CAGTGGCAGT AGGGCCCGCG CAAGAAGTGC CAACGGAAGA ATTGATGCAA CTCCAAGAGG 1860 ACGATTTCGA ATTAGAAGGA ACTGCAGAAG CTCCAGAGGA AGGAGAATTA GTATTAGAAG 1920 GAGAAGGAGA ACCAACGGAA GAGAGCCAA GAGAAGGAGA GCCAACAGAA GGAGAAGTGC 1980 CAGAAGCAGA ATTAGAAGGA ACTCCAGAGG ACGATTTCGA ATTAGAAGAA CCAACAGGAG 2040 AAGAAGCAGA ATTAGAAGGA ACTCCAGAGG ACGATTTCGA ATTAGAAGAA CCAACAGGAG 2100 TACCQGCCAGA AGTAGAAGAA GTGGAAGAGG TACCTGCAGA AGGAGAAGAA GTGGAAGAGG 2100 TACCQGCCAGA AGTAGAAGAA GTGGAAGAGG TACCTGCAGA AGGAGAAGAA GTGGAAGAGG 2100 TACCQGCAGA AGTAGAAGAA GTAGAAGAA GTAGAAGAA GTGGAAGAGG 2220 AAGTGGAAGA GGTACCAGAA GAAGTGGAAG AAGTAGAAGA AGTAGAAGAA GTGGAAGAG 2220 AAGTGGAAGA GGTACCAGAA GAAGTAGAAG AAGTAGAAGA AGAAGTGGAA GAGGTACCAG 2280 AAGAACCAGC GGTACCAGAA GAAGTAGAAG AAGTAGAAGA ACCAGCGGTA GTAGAAGGAG 2340 AAGAACCAGC GGTACCAGAA GAAGTAGAAG AAGTAGAAGA ACCAGCGGTA GTAGAAGTAG 2340 AAGAACCAGC GGTAGTAGAA GAAGTAGAAG AAGTAGAAGT AGAAGAAGAA GAAGAAGAGG 2400 AAGAACCAGC GGTAGTAGAA GAAGTATTAC AATTAGTAAT ACCATCGGAA GAAGAAGAGG 2400 AAGAACCAGA ACCAAAGAAA GACGAATTAG GCTCTGGAAT TTTATCTATC ATCGACATCC 2520 ACTACCAAGA CGTTCCAAAG GAATTTATGG AAGAAGAAGA AGAAACTGCA GTGTATCCAT 2580 TGAAACCAGA AGATTTTGCA AAGGAAGATT CACAATCTAC AGAATAGGCT ACATTCATTC 2640 AAGGCCTAGA AGGCCTGG GAACGATTAG AAGAAGAGA AGAAACTGCA GTGTATCCAT 2580 GGATGGAACA AAGAAATAAA GAATGGGCT GCTGGCTTC CTTAATTGA AATAAATGGT 2760 CAGAATATAG TCAAATTCA ACAAAAGGAA AGGACCCAGC TGGTTTGAA AATAAATGGT 2760 CAGAACCACG GAAATGGAAA AAAAGGAA AGGACCCAGC TGGTTTGAA AATAAATGGT 2760 CAGAACCACG GAAATGGAAA AAAAGGAA AGGACCCAGC TGGTTTGAA AATAAAATGGT 2760 CAGAACCACG GAAATGGAAA AAAAGGAA AGGACCCAGC TGGTTTGAAA AAAAAAGGAT 2820 GGAGCGACCA GAAATGGAAA AAAAGGAAA AAGGAAAGGA	AGCCTGTCAA ACCAATGGT	GCTCCAACGG	CAGATGAAAC	TTTATTCGTT	GATATCTTAG	1680
CAGTGCAGT AGGGCCCGCG CAAGAAGTGC CAACGGAAGA ATTGATGCAA CTCCAAGAGG 1860 ACGATTTCGA ATTAGAAGGA ACTGCAGAAG CTCCAGAGGA AGGAGAATTA GTATTAGAAG 1920 GAGAAGGAGA ACCAACGGAA GAAGAGCCAA GAGAAGGAG GCCAACAGAA GGAGAAGTGC 1980 CAGAAGGAGA ATTAGAAGGA ACTCCAGAGG ACGATTTCGA ATTAGAAGA CCAACAGGAG 2040 AAGAAGTAGA ATTAGAAGGA ACCACGGAA GAGGGCGAAG AAACTGCAGA AGGAGAAGAA CTGGAAGAGG 2100 AAGAAGTAGA AGAAACCGTA GAGGGCGAAG AAACTGCAGA AGTAGAAGAA GTGGAAGAGG 2100 TACCTGCAGA AGTAGAAGAA GTGGAAGAGG TACCTGCAGA AGTAGAAGAA GTGGAAGAGG 2100 TACCTGCAGA AGTAGAAGAG GTACCCGCAG AAGTAGAAGA AGTGGAAGAAG GTGGAAGAGG 2220 AAGATGGAAGA GGTACCAGAA GAAGTGGAAG AGGTACCAG AGGAGAGAAG GTACCAGAAG 2220 AAGATGGAAGA GGTACCAGAA GAAGTGGAAG AGGTACCAG AGGAGAGAG GTACCAGAAG 2220 AAGATGGAAGA GGTACCAGAA GAAGTGGAAG AAGTAGAAGA GAGAGAGAG GAGGTACCAG 2280 AAGATGCAGA AGAAGTGGAA GAAGTGGAAG AAGTAGAAGA ACCAAGAAGAA GAAGAGAGAG 2400 AAGATACCAGA GGTAGTAGAA GAAGAGGTGC CAGAAGAAGT ACCACGCGGTA GTAGAAGTAG 2460 AAGATACCAGA AGCAAGAAA GAAGGATTAC AATTAGTAAT ACCATCGGAA GAAGATATAC 2460 AATTAGACAA ACCAAAGAAA GAACGAATTAG GCTCTGGAAT TTTATCTATC ATCGACATGC 2520 ACTACCAAGA CGTTCCAAAG GAATTTATG AAGAAGAAGA AGAAACTGCA GTGTATCCAT 2580 AAGAGCCTAGA AGGACTTG GAACGATTAG AAGAAGAAGA AGAAACTGCA GTGTATCCAT 2580 AAGGCCTAGA AGGCCACTG GAACGATTAG AAGTGAGCTT AAATAAAGGCT AGAGAAAGAT 2700 GGATGGAACA AAGAAATAAA GAATGGGCTG GCTGGCTTCG CTTAATTGAA AATAAATGGT 2760 CAGAATATAG TCAAATTTCA ACAAAAGGAA AGGACCCACC TGGTTTGAGA AAACGAGAGT 2820 GGAGGCGACGA GAAATGGAAA AAATGGATTA AACAAAGGAA AAGAAATGAA AACAAAGGAA AAGAAATGAA AACAAAGGAA AAGAAACGAA AAGAAATTAAA AACAAAAGGAA AGGACCCACC TGGTTTGAGA AAACAGAGAGT 2820 GGAGGCGACGA GAAATGGAAA AAATGGATTA AACAAAGGAA AAGAAACTGCA AACAAATGCAA AACAAAAGGAA AAGAAACGAAGA AAGAAATTAAA AACAAAAGGAA AAGAACCCAAC TAGAATTCCAA AATAAAAGGAT 2820 GGAGGCGACGA GAAATGGAAA AAAAAGGAA AAGAAACGAAGAT CAAATCCCAA ATTGATTCAC 2880	ATAACGATTT AACGTATGC	GACATTACAT	CCTTTGAGCC	AAATTTATTA	CAAATCCTCA	1740
ACGATTICGA ATTAGAAGGA ACTGCAGAAG CTCCAGAGGA AGGAGAATTA GTATTAGAAG 1920 GAGAAGGAGA ACCAACGGAA GAAGAGCCAA GAGAAGGAGA GCCAACAGAA GGAGAAGTGC 1980 CAGAÃGAAGA ACTAGAGGCA ACTCCAGAGG ACGATTICGA ATTAGAAGAA CCAACAGGAG 2040 AAGAÃGAAGA AGAAACCGTA GAGGGCGAAG AAACTGCAGA AGGAGAAGAA GTGGAAGAGG 2100 TACCTGCAGA AGTAGAAGAA GTGGAAGAGG TACCTGCAGA AGTAGAAGAA GTGGAAGAGG 2160 TACCTGCAGA AGTAGAAGAA GTGGAAGAGG TACCTGCAGA AGTAGAAGAA GTGGAAGAGG 2220 AAGTĀGGAAGA AGTAGAAGAG GTACCCGCAG AAGTAGAAGA AGTAGAAGAA GTGGAAGAG 2220 AAGTĀGGAAGA GGTACCAGAA GAAGTGGAAG AGGTACCAG AGGAGAGAGA GAGGTACCAG 2280 AAGAĀGTGGAA AGAAGTGGAA GAAGTAGAAG AAGTAGAAGA ACCAGCGGTA GTAGAAGTAG 2340 AAGTĀGCAGC GGTAGTAGAA GAAGTAGAAG AAGTAGAAGT ACCAGCGGTA GTAGAAGTAG 2460 AAGAĀCCAGC AGAAGAGAA GATTATAC AATTAGTAAT ACCATCGGAA GAAGAAGAGG 2400 AAGAĀCCAGT AGAAGAAGAA GACGAATTAC GCTCTGGAAT TTTATCTATC ATCGACATGC 2520 ACTACCAAGA CGTTCCAAAG GAACTTATGG AAGAAGAGA AGAAACTGCA GTGTATCCAT 2580 AGAGCCTAGA AGGATTAGA AAGGAAGAT CACAATCTAC AGAATAGCCT ACATTCCAT 2640 AAGGCCTAGA AGGCCACTG GAACGATTAG AAGTAGACT AAATAAGGCT AGAAAAGGAT 2700 GGATGGAACA AAGAAATAAA GAACGAGTAG AGGACCCAC TGGTTTGAGA AAACAGAGGT 2820 GGAGGGACGA GAAATTCCA ACAAAGGAA AAGAACGAAGA AAAACGAGAGT CACAATTCAC AGAAATATAG CACAAAAGGAA AAGAAATAAA GAAAAGGAA AGGACCCAC TGGTTTGAGA AAACAGAGAGT 2820 GGAGGGACGA GAAATTCCA ACAAAAGGAA AGGACCCAC TGGTTTGAGA AAACGAGAGT 2820 GGAGGGACGA GAAATTCCA ACAAAAGGAA AGGACCCAC TGGTTTGAGA AAACGAGAGT 2820 GGAGGGACGA GAAATTCCA ACAAAAGGAA AGGACCCAC TGGTTTGAGA AAACGAGAGT 2820 GGAGGGACGA GAAATTCCA ACAAAAGGAA AAGAACCCAA AAAAAGGAA AAAAGGAAA AAAAAGGAA AAAAAGGAA AAAAAGGAA AAAAAGGAA AAAAGGAAA AAAAGGAAA AAAAGGAAA AAAAAGGAA AAAAAGGAA AAAAAGGAAA AAAAAGGAAAA AAAAAGGAAA AAAAAGGAAA AAAAAGGAA AAAAAGGAAA AAAAAGGAAA AAAA	AGGATCCTGA TGCAGGAGAG	GCTGTAACAG	TACCATCAAA	GGAAGCACCT	GTACAAGTAC	1800
GAGAAGGAGA ACCAACGGAA GAAGAGCCAA GAGAAGGAGA GCCAACAGAA GGAGAAGTGC CAGAAGAAGAA ATTAGAAGCCA ACTCCAGAGG ACGATTTCGA ATTAGAAGAA CCAACAGGAG AACAAGAAGAA AGAAACCGTA GAGGGCGAAG AAACTGCAGA AGGAGAAGAA GTGGAAGAGG 2100 (N TACCAGCAGA AGAAACCGTA GAGGGCGAAG AAACTGCAGA AGGAGAAGAA GTGGAAGAGG 2100 TACCAGCAGA AGTAGAAGAA GTGGAAGAG TACCTCCAGA AGTAGAAGAA GTGGAAGAGG 2220 TACCAGCAGA AGTAGAAGAA GTACCCGCAG AAGTAGAAGA AGTAGAAGAA GTACCAGAAG 2220 AAGTAGAAGA GGTACCAGAA GAAGTGGAAG AGGTACCAGA AGAAGTGGAA GAGGTACCAG AAGAAGTGGAA GAAGTGGAA GAAGTAGAAG AAGTAGAAGA ACCAGCGGTA GTAGAAGTAG 2340 AAGTAGCAGG GGTAGTAGAA GAAGAGGTGC CAGAAGAAGT ACCAGCGGTA GTAGAAGAGG 2400 AAGAACCAGG AGGAGAAGAA GAAGAGGTGC CAGAAGAAGT ACCACGGGAA GAAGATATAC 2460 AATTAGACAA ACCAAAGAAA GACGAATTAG GCTCTGGAAT TTTATCTATC ATCGACATGC 2520 ACTACCAAGA CGTTCCAAAG GAATTATGG AAGAAGAAGA AGAAACTGCA GTGTATCCAT 2580 TGAAACCAGA AGGACTGG GAACGATTAG AAGTAGAGAT AAATAAAGGCT ACATTCATTC 2640 AAGGCCTAGA AGGACATGA GAACGATTAG AAGTAGACT AAATTAAGCCA ACATTCATC 2640 AAGGCCTAGA AGGACATGA GAACGATTAG AAGTGAGCT AAATTAAGGCT ACATTCATTC 2640 GAGGCGACGA AAGAAATAAA GAACGATTAG GCTGCCTTCG CTTAATTGAA AAACAAAGGA 2700 GGATGGAACA AAGAAATAAA GAATGGCTG GCTGCCTTCG CTTAATTGAA AAACAGAGAT 2700 GGATGGAACA AAGAAATAAA GAATAGGAA AGGACCCAGC TGGTTTGAAA AAACGAGAGT 2820 GGAGGCGACGA GAAATGGAAA AAATGGTTTA AAGCACAGA AAACGAGAGT 2820 GGAGGCGACGA GAAATGGAAA AAATGGTTTA AAGCACAGAG CAAATCCCAA ATTGATTCAC 2880	CAGTGGCAGT AGGGCCCGCC	CAAGAAGTGC	CAACGGAAGA	ATTGATGCAA	CTCCAAGAGG	1860
CAGAÑAGAAGA ATTAGAGGCA ACTCCAGAGG ACGATTTCGA ATTAGAAGAA CCAACAGGAG 2040 AAGAÑAGTAGA AGAAACCGTA GAGGGCGAAG AAACTGCAGA AGGAGAAGAA GTGGAAGAGG 2100 TACCQGCAGA AGTAGAAGAA GTGGAAGAGG TACCTCCAGA AGTAGAAGAA GTGGAAGAGG 2160 TACCQAGAAGA AGTAGAAGAA GTAGCAGAA GTACCAGAA AGTAGAAGAA GTGGAAGAGG 2220 AAGTGGAAGA AGTAGAAGAA GTACCCGCAG AAGTAGAAGA AGTAGAAGAA GTACCAGAAG 2220 AAGTGGAAGA GGTACCAGAA GAAGTGGAAG AGGTACCAGA AGAAGTGGAA GAGGTACCAG 2280 AAGAÑAGTGGA AGAAGTGGAA GAAGTAGAAG AAGTAGAAGT ACCAGCGGTA GTAGAAGTAG 2340 AAGAÑACCAGC GGTACTAGAA GAAGAGGTGC CAGAAGAAGT AGCACCGGTA GTAGAAGTAG 2460 AAGAÑACCAGT AGAAGAAGAA GATGTATTAC AATTAGTAAT ACCATCGGAA GAAGATATAC 2460 AATTAGACAA ACCAAAGAAA GACGAATTAG GCTCTGGAAT TTTATCTATC ATCGACATGC 2520 ACTACCAAGA CGTTCCAAAG GAATTTATGG AAGAAGAAGA AGAAACTGCA GTGTATCCAT 2580 TGAAACCAG AGATTTTGCA AAGGAAGATT CACAATCTAC AGAATAGGCT ACATTCATTC 2640 AAGGCCTAGA AGGCGACTGG GAACGATTAG AAGTGAGCTT AAATAAAGGCT AGAGAAAGAT 2700 GGATGGAACA AAGAAATAAA GAATGGGCTG GCTGGCTTCG CTTAATTGAA AATAAATGGT 2760 CAGAATATAG TCAAATTTCA ACAAAAGGAA AGGACCCAGC TGGTTTGAGA AAACAGAGAT 2820 GGAGCGACGA GAAATGGAA AAATGGTTTA AAGCACAGC TGGTTTGAGA AAACAGAGAGT 2820 GGAGCGACGA GAAATGGAA AAATGGTTTA AAGCACAGC TGGTTTGAGA AAACAGAGAGT 2820	ACGATTTCGA ATTAGAAGGA	ACTGCAGAAG	¢TCCAGAGGA	AGGAGAATTA	GTATTAGAAG	1920
AAGAĞTAGA AGAAACCGTA GAGGGCGAAG AAACTGCAGA AGGAGAAGAA GTGGAAGAGG 2100 [1] TACCTGCAGA AGTAGAAGAA GTGGAAGAGG TACCTGCAGA AGTAGAAGAA GTGGAAGAGG 2160 TACCTGCAGA AGTAGAAGAA GTGGAAGAGG TACCTGCAGA AGTAGAAGAA GTGGAAGAGG 2220 AAGTAGAAGA AGTAGAAGAG GTACCCGCAG AAGTAGAAGA AGTGGAAGAG GTACCAGAAG 2220 AAGTAGGAAGA GGTACCAGAA GAAGTGGAAG AGGTACCAGA AGAAGTGGAA GAGGTACCAG 2280 AAGAĞTGGGA AGAAGTGGAA GAAGTAGAAG AAGTAGAGGT ACCAGCGGTA GTAGAAGTAG 2340 AAGTACCAGC GGTAGTAGAA GAAGAGGTGC CAGAAGAAGT AGAAGAAGAA GAAGAAGAGG 2400 AAGAĞTCCAGC GGTAGTAGAA GATGTATTAC AATTAGTAAT ACCATCGGAA GAAGATATAC 2460 AATTAGACAA ACCAAAGAAA GACGAATTAG GCTCTGGAAT TTTATCTATC ATCGACATGC 2520 ACTACCAAGA CGTTCCAAAG GAATTTATGG AAGAAGAAGA AGAAACTGCA GTGTATCCAT 2580 TGAAACCAGA AGATTTTGCA AAGGAAGATT CACAATCTAC AGAATAGCCT ACATTCATTC 2640 AAGGCCTAGA AGGCGACTGG GAACGATTAG AAGTGAGCTT AAATAAGCCT AGAGAAAGAT 2700 GGATGGAACA AAGAAATAAA GAATGGGCTG GCTGGCTTCG CTTAATTGAA AATAAATGGT 2760 CAGAATATAG TCAAATTTCA ACAAAAGGAA AGGACCCAGC TGGTTTGAGA AAACGAGAGT 2820 GGAGCGACCA GAAATGGAA AAATGGTTTA AAGCAGAAGT CAAATCCCAA ATTGATTCAC 2880	GAGAAGGAGA ACCAACGGAI	GAAGAGCCAA	GAGAAGGAGA	GCCAACAGAA	GGAGAAGTGC	1980
TACCTECAGA AGTAGAAGAA GTGGAAGAG TACCTCAGA AGTAGAAGAA GTGGAAGAGG 2220 TACCTAGAAGAA AGTAGAAGAG GTACCCGCAG AAGTAGAAGA AGTGGAAGAG GTACCAGAAG 2220 AACTTGAAGA AGTACCAGAA GAAGTGGAAG AGGTACCAGA AGAAGTGGAA GAGGTACCAG 2280 AACATTGAAGA AGAAGTGGAA GAAGTAGAAG AAGTAGAAGT ACCAGCGGTA GTAGAAGTAG 2340 AACATTCCAGC GGTAGTAGAA GAAGAGGTC CAGAAGAAGT AGAAGAAGAA GAAGAAGAG 2400 AACATTCCAGC GGTAGTAGAA GAAGAGGTC CAGAAGAAGT AGAAGAAGAA GAAGAAGAG 2400 AACATTCCAGC AGAGGAAGAA GATGTATTAC AATTAGTAAT ACCATCGGAA GAAGATATAC 2460 AATTAGACAA ACCAAAGAAA GACGAATTAG GCTCTGGAAT TTTATCTATC ATCGACATGC 2520 ACTACCAAGA CGTTCCAAAG GAATTTATGG AAGAAGAAGA AGAAACTGCA GTGTATCCAT 2580 TGAAACCAGA AGATTTTGCA AAGGAAGAT CACAATCTAC AGAATCGCTC ACATTCATTC 2640 AAGGCCTAGA AGGCGACTGG GAACGATTAG AAGTGAGCTT AAATAAGGCT AGAGAAAGAT 2700 GGATGGAACA AAGAAATAAA GAATGGGCTG GCTGGCTTCG CTTAATTGAA AATAAATGGT 2760 CAGAATATAG TCAAATTTCA ACAAAAGGAA AGGACCCAGC TGGTTTGAGA AAACGAGAGT 2820 GGAGCGACGA GAAATGGAAA AAATGGTTTA AAGCACAAGT CAAATCCCAA ATTGATTCAC 2880	CAGAÃGAAGA ATTAGAGGCA	ACTCCAGAGG	ACGATTTCGA	ATTAGAAGAA	CCAACAGGAG	2040
TACCAGAGAAGA AGTAGAAGAG GTACCCGCAG AAGTAGAAGA AGTGGAAGAG GTACCAGAAG 2280 AAGTGGAAGA GGTACCAGAA GAAGTGGAAG AGGTACCAGA AGAAGTGGAA GAGGTACCAG 2280 AAGAAGTGGAAGA AGAAGTGGAA GAAGTAGAAG AAGTAGAAGT ACCAGCGGTA GTAGAAGTAG 2340 AAGAAGTACCAGC GGTAGTAGAA GAAGAGGTGC CAGAAGAAGT AGAAGAAGAA GAAGAAGAGG 2400 AAGAAACCAGT AGAGGAAGAA GATGTATTAC AATTAGTAAT ACCATCGGAA GAAGATATAC 2460 AATTAGACAA ACCAAAGAAA GACGAATTAG GCTCTGGAAT TTTATCTATC ATCGACATGC 2520 ACTACCAAGA CGTTCCAAAG GAATTTATGG AAGAAGAAGA AGAAACTGCA GTGTATCCAT 2580 TGAAACCAGA AGATTTTGCA AAGGAAGATT CACAATCTAC AGAATAGCCT ACATTCATTC 2640 AAGGCCTAGA AGGCGACTGG GAACGATTAG AAGTGAGCTT AAATAAGGCT AGAGAAAGAT 2700 GGATGGAACA AAGAAATAAA GAATGGGCTG GCTGGCTTCG CTTAATTGAA AATAAATGGT 2760 CAGAATATAG TCAAATTCA ACAAAAGGAA AGGACCCAGC TGGTTTGAGA AAACGAGAGT 2820 GGAGCGACGA GAAATGGAAA AAATGGTTTA AAGCAGAAGT CAAATCCCAA ATTGATTCAC 2880	AAGAÄGTAGA AGAAACCGTI	GAGGGCGAAG	AAACTGCAGA	AGGAGAAGAA	GTGGAAGAGG	2100
AAGTTGGAAGA GGTACCAGAA GAAGTGGAAG AGGTACCAGA AGAAGTGGAA GAGGTACCAG 2280 AAGATTGGAAGA AGAAGTGGAA GAAGTAGAAG AAGTAGAGGT ACCAGCGGTA GTAGAAGTAG 2340 AAGTTGCCAGC GGTAGTAGAA GAAGAGGTGC CAGAAGAAGT AGAAGAAGAA GAAGAAGAGG 2400 AAGTTGCCAGC AGAAGAAA GATGTATTAC AATTAGTAAT ACCATCGGAA GAAGAAGAGG 2460 AATTAGACAA ACCAAAGAAA GACGAATTAG GCTCTGGAAT TTTATCTATC ATCGACATGC 2520 ACTACCAAGA CGTTCCAAAG GAATTTATGG AAGAAGAAGA AGAAACTGCA GTGTATCCAT 2580 TGAAACCAGA AGATTTTGCA AAGGAAGATT CACAATCTAC AGAATCGCTC ACATTCATTC 2640 AAGGCCTAGA AGGCGACTGG GAACGATTAG AAGTGAGCTT AAATAAGGCT AGAGAAAGAT 2700 GGATGGAACA AAGAAATAAA GAATGGGCTG GCTGGCTTCG CTTAATTGAA AATAAATGGT 2760 CAGAATATAG TCAAATTCA ACAAAAGGAA AGGACCCAGC TGGTTTGAGA AAACGAGAGT 2820 GGAGCGACGA GAAATGGAAA AAATGGTTTA AAGCAGAAGT CAAATCCCAA ATTGATTCAC 2880	II TACC¶GCAGA AGTAGAAGAI	GTGGAAGAGG	TACCTOCAGA	AGTAGAAGAA	GTGGAAGAGG	2160
AAGAGTGGA AGAAGTGGAA GAAGTAGAAG AAGTAGAGGT ACCAGCGGTA GTAGAAGTAG 2340 AAGTACCAGC GGTAGTAGAA GAAGAGGTGC CAGAAGAAGT AGAAGAAGAA GAAGAAGAGG 2400 AAGAACCAGT AGAAGAAA GAAGAGTATAC AATTAGTAAT ACCATCGGAA GAAGATATAC 2460 AATTAGACAA ACCAAAGAAA GACGAATTAG GCTCTGGAAT TTTATCTATC ATCGACATGC 2520 ACTACCAAGA CGTTCCAAAG GAATTTATGG AAGAAGAAGA AGAAACTGCA GTGTATCCAT 2580 TGAAACCAGA AGATTTTGCA AAGGAAGAT CACAATCTAC AGAATGGCTC ACATTCATTC 2640 AAGGCCTAGA AGGCGACTGG GAACGATTAG AAGTGAGCTT AAATAAGGCT AGAGAAAGAT 2700 GGATGGAACA AAGAAATAAA GAATGGGCTG GCTGGCTTCG CTTAATTGAA AATAAATGGT 2760 CAGAATATAG TCAAATTTCA ACAAAAGGAA AGGACCCAGC TGGTTTGAGA AAACGAGAGT 2820 GGAGCGACGA GAAATGGAAA AAATGGTTTA AAGCAGAAGT CAAATCCCAA ATTGATTCAC 2880	TACCAGAAGA AGTAGAAGA	GTACCCGCAG	AAGTAGAAGA	AGTGGAAGAG	GTACCAGAAG	2220
AAGTÄCCAGC GGTAGTAGAA GAAGAGGTGC CAGAAGAAGT AGAAGAAGAA GAAGAAGAGG 2400 AAGTÄCCAGT AGAGGAAGAA GATGTATTAC AATTAGTAAT ACCATCGGAA GAAGATATAC 2460 AATTAGACAA ACCAAAGAAA GACGAATTAG GCTCTGGAAT TTTATCTATC ATCGACATGC 2520 ACTACCAAGA CGTTCCAAAG GAATTATGG AAGAAGAAGA AGAAACTGCA GTGTATCCAT 2580 TGAAACCAGA AGATTTTGCA AAGGAAGATT CACAATCTAC AGAATGGCTC ACATTCATTC 2640 AAGGCCTAGA AGGCGACTGG GAACGATTAG AAGTGAGCTT AAATAAGGCT AGAGAAAGAT 2700 GGATGGAACA AAGAAATAAA GAATGGGCTG GCTGGCTTCG CTTAATTGAA AATAAATGGT 2760 CAGAATATAG TCAAATTTCA ACAAAAGGAA AGGACCCAGC TGGTTTGAGA AAACGAGAGT 2820 GGAGCGACGA GAAATGGAAA AAATGGTTTA AAGCAGAAGT CAAATCCCAA ATTGATTCAC 2880	AAGTGGAAGA GGTACCAGAI	GAAGTGGAAG	AGGTACCAGA	AGAAGTGGAA	GAGGTACCAG	2280
AAGAÄÄCCAGT AGAGGAAGAA GATGTATTAC AATTAGTAAT ACCATCGGAA GAAGATATAC 2460 AATTAGACAA ACCAAAGAAA GACGAATTAG GCTCTGGAAT TTTATCTATC ATCGACATGC 2520 ACTACCAAGA CGTTCCAAAG GAATTTATGG AAGAAGAAGA AGAAACTGCA GTGTATCCAT 2580 TGAAACCAGA AGATTTTGCA AAGGAAGATT CACAATCTAC AGAATCGCTC ACATTCATTC 2640 AAGGCCTAGA AGGCGACTGG GAACGATTAG AAGTGAGCTT AAATAAGGCT AGAGAAAGAT 2700 GGATGGAACA AAGAAATAAA GAATGGGCTG GCTGGCTTCG CTTAATTGAA AATAAATGGT 2760 CAGAATATAG TCAAATTCA ACAAAAGGAA AGGACCCAGC TGGTTTGAGA AAACGAGAGT 2820 GGAGCGACGA GAAATGGAAA AAATGGTTTA AAGCAGAAGT CAAATCCCAA ATTGATTCAC 2880	AAGAAGTGGA AGAAGTGGAI	GAAGTAGAAG	AAGTAGAGGT	ACCAGCGGTA	GTAGAAGTAG	2340
AATTAGACAA ACCAAAGAAA GACGAATTAG GCTCTGGAAT TTTATCTATC ATCGACATGC 2520 ACTACCAAGA CGTTCCAAAG GAATTTATGG AAGAAGAAGA AGAAACTGCA GTGTATCCAT 2580 TGAAACCAGA AGATTTTGCA AAGGAAGATT CACAATCTAC AGAATGGCTC ACATTCATTC 2640 AAGGCCTAGA AGGCGACTGG GAACGATTAG AAGTGAGCTT AAATAAGGCT AGAGAAAGAT 2700 GGATGGAACA AAGAAATAAA GAATGGGCTG GCTGGCTTCG CTTAATTGAA AATAAATGGT 2760 CAGAATATAG TCAAATTTCA ACAAAAGGAA AGGACCCAGC TGGTTTGAGA AAACGAGAGT 2820 GGAGCGACGA GAAATGGAAA AAATGGTTTA AAGCAGAAGT CAAATCCCAA ATTGATTCAC 2880	AAGTACCAGC GGTAGTAGAA	A GAAGAGGTGC	CAGAAGAAGT	GAAGAAGAA	GAAGAAGAGG	2400
ACTACCAAGA CGTTCCAAAG GAATTTATGG AAGAAGAAGA AGAAACTGCA GTGTATCCAT 2580 TGAAACCAGA AGATTTTGCA AAGGAAGATT CACAATCTAC AGAATGGCTC ACATTCATTC 2640 AAGGCCTAGA AGGCGACTGG GAACGATTAG AAGTGAGCTT AAATAAGGCT AGAGAAAGAT 2700 GGATGGAACA AAGAAATAAA GAATGGGCTG GCTGGCTTCG CTTAATTGAA AATAAATGGT 2760 CAGAATATAG TCAAATTCA ACAAAAGGAA AGGACCCAGC TGGTTTGAGA AAACGAGAGT 2820 GGAGCGACGA GAAATGGAAA AAATGGTTTA AAGCAGAAGT CAAATCCCAA ATTGATTCAC 2880	AAGAACCAGT AGAGGAAGA	A GATGTATTAC	AATTAGTAAT	ACATCGGAA	GAAGATATAC	2460
TGAAACCAGA AGATTTTGCA AAGGAAGATT CACAATCTAC AGAATGGCTC ACATTCATTC 2640 AAGGCCTAGA AGGCGACTGG GAACGATTAG AAGTGAGCTT AAATAAGGCT AGAGAAAGAT 2700 GGATGGAACA AAGAAATAAA GAATGGGCTG GCTGGCTTCG CTTAATTGAA AATAAATGGT 2760 CAGAATATAG TCAAATTTCA ACAAAAGGAA AGGACCCAGC TGGTTTGAGA AAACGAGAGT 2820 GGAGCGACGA GAAATGGAAA AAATGGTTTA AAGCAGAAGT CAAATCCCAA ATTGATTCAC 2880	AATTAGACAA ACCAAAGAA	A GACGAATTAG	GCTCTGGAAT	TTTATCTATC	ATCGACATGC	2520
AAGGCCTAGA AGGCGACTGG GAACGATTAG AAGTGAGCTT AAATAAGGCT AGAGAAAGAT 2700 GGATGGAACA AAGAAATAAA GAATGGGCTG GCTGGCTTCG CTTAATTGAA AATAAATGGT 2760 CAGAATATAG TCAAATTTCA ACAAAAGGAA AGGACCCAGC TGGTTTGAGA AAACGAGAGT 2820 GGAGCGACGA GAAATGGAAA AAATGGTTTA AAGCAGAAGT CAAATCCCAA ATTGATTCAC 2880	ACTACCAAGA CGTTCCAAA	GAATTTATGG	AAGAAGAAGA	AGAAACTGCA	GTGTATCCAT	2580
GGATGGAACA AAGAAATAAA GAATGGGCTG GCTGGCTTCG CTTAATTGAA AATAAATGGT 2760 CAGAATATAG TCAAATTTCA ACAAAAGGAA AGGACCCAGC TGGTTTGAGA AAACGAGAGT 2820 GGAGCGACGA GAAATGGAAA AAATGGTTTA AAGCAGAAGT CAAATCCCAA ATTGATTCAC 2880	TGAAACCAGA AGATTTTGC	AAGGAAGATT	CACAATCTAC	AGAATGCTC	ACATTCATTC	2640
CAGAATATAG TCAAATTTCA ACAAAAGGAA AGGACCCAGC TGGTTTGAGA AAACGAGAGT 2820 GGAGCGACGA GAAATGGAAA AAATGGTTTA AAGCÄGAAGT CAAATCCCAA ATTGATTCAC 2880	AAGGCCTAGA AGGCGACTG	G GAACGATTAG	AAGTGAGCTT	ааатаа	AGAGAAAGAT	2700
GGAGCGACGA GAAATGGAAA AAATGGTTTA AAGCÄGAAGT CAAATCCCAA ATTGATTCAC 2880	GGATGGAACA AAGAAATAA	A GAATGGGCTG	GCTGGCTTCG	CTTAATTGAA	AATAAATGGT	2760
$\cdot \setminus$.	: CAGAATATAG TCAAATTTC	A ACAAAAGGAA	AGGACCCAGC	TGGTTTGAGA	AAACGAGAGT	2820
ACTTGAAAAA ATGGATGAAC GACACTCATT CCAATTTATT TAAAATTCTT GTGAAAGATA 2940	GGAGCGACGA GAAATGGAA	AAATGGTTTA	AAGCÅGAAGT	CAAATCCCAA	ATTGATTCAC	2880
	ACTTGAAAAA ATGGATGAA	GACACTCATT	CCAATTTATT	TAAAATTCTT	GTGAAAGATA	2940

(NS)

TGTCACAATT TGAAAACAAG AAAACCA	AAAG AATGGTTAAT GAATCACTGG AAAAAGA	AACG 3000
	GAAG TTATGACCAC ATCAAAATTA TTAAATC	
CTAAGAGTCG AGAATGGTAC CGTGCCA	AATC CTAATATAAA TAGAGAAAGA AGAGAAC	OTCA 3120
TGAAATGGTT TCTCCTAAAA GAAAACC	GAAT ATTTAGGACA AAGAATGGAA AAAATGG	GACT 3180
CATTGGAAAA AAGTTAAATT TTTTGT	GTTC AATTCAATGT GTACAACATT TTCTGG	AAAA 3240
CGCCTAACCA AGGAAGAATG GAATCA	TTT GTTAATGAAA TAAAAGTTTG AATTATA	AGAA 3300
AAAAGAACAG ATTATTCTCT TATAAA	ATAA ATAATTC	3337
(2) INFORMATION FOR SEC ID NO	1.2	

(2) INFORMATION FOR SEQ ID NO:2

(i) SEQUENCE CHARACTERISTICS

- (A) LENGTH: 1018 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: protein
- (Mi) HYPOTHETICAL: YES
- (iv) ANTI-SENSE: NO
- [≟(v) FRAGMENT TYPE: C-terminal
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: Plasmodium vivax
- (Vii) IMMEDIATE SOURCE:
 - (B) CLONE: PvMB3.3.1

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tin) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Asn Ser Gly Lys Val Thr Thr Met Val Ser Tyr Leu Tyr Ile Thr Leu
1 10 15

Leu Ile Leu Ser Phe Ala Phe Leu Leu Ile His Alà Ser Thr Asn Asp 20 25 30

Leu Glu Leu Glu Asn Ala Ser Asp Asp Val Val Glu Val Glu Asp Pro
35 40 45

Ser Asn Asp Gly Leu Glu Leu Glu Glu Glu Asn Phe Asp Glu Asn Ser 50 55 60

Gly Asp Asp Glu Thr Leu Leu Asp Ala Thr Pro Glu Asp Asp Phe Ala
65 70 75 80

Leu Thr Asp Leu Pro Ile Glu Asp Asp Glu Glu Val Asn Glu Thr Leu

Jos.

Asp Gly Glu Ser Led Gly Glu Val Ser Thr Glu Asp Met Glu Thr 105 Glu Asp Gly Ser Thr Asp Asp Thr Glu Thr Glu Glu Gly Leu Pro Gly Asp Met Glu Glu Glu Glu Glu Ala Gly Asp Met Glu Ala Gly Glu Glu 135 Ala Gly Asp Leu Glu Ala Gly Glu Glu Thr Gly Asp Leu Glu Ala Gly Glu Glu Thr Gly Asp Leu Glu Ala Gly Glu Glu Ala Gly Asp Leu Glu 170 165 ° Ala Gly Glu Glu Thr Gly Asp Leu Glu Ala Gly Glu Glu Thr Gly Asp Ala Glu Thr Glu Glu Gly Ala Thr Gl\(\frac{1}{\chi}\) Asp Ala Glu Thr Glu Asn Gly 200 Ala Thr Val Tyr Val Asp Thr Glu Asp Ser Ser Ala Asp Gly Ala Glu 220 215 Lys Val His Val Pro Ala Gln Glu Asn Val Gln Pro Ala Asp Ser Asn 235 Asp Ala Leu Phe Gly Ser Ile Leu Asp Lys Asp Ile Ile Phe Asp His 250 Ile Lys Asp Phe Glu Pro Leu Phe Glu Gln Ile Val Ala Gly Thr Ala 265 Lys His Val Thr Gly Gln Glu Leu Pro Met Lys Pro Val Pro Leu Pro O 275 280 285 Val Ala Glu Glu Pro Ala Gln Val Pro Ala Glu Glu Leu Asp Ala Thr Pro Glu Asp Asp Phe Ala Leu Asp Val Thr Glu Ser Pro Glu Glu Val 305 315 Glu Leu Val Leu Asp Glu Glu Ala Thr Glu Glu Glu Set Thr Glu Val 325 330 335 Gly Pro Thr Glu Glu Gly Pro Thr Glu Glu Leu Asp Ala Thr Pro Glu 340 345 Asp Gly Phe Arg Ile Arg Arg Asn Cys Arg Arg Arg Asn Arg Asn 365 Val Glu Glu Glu Thr Glu Glu Ala Ala Glu Gly Glu Val Çer Glu

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Glu Thr Pro Glu Gly\Glu Glu Glu Leu Glu Ala Thr Pro Glu Asp Asp 395 Phe Ala Leu Asp Gly Thr Thr Leu Glu Glu Thr Glu Glu Thr Ala Glu 410 Gly Glu Glu Thr Val Glu\Gly Glu Glu Thr Val Glu Glu Glu Thr 425 430 Val Glu Glu Glu Ala Ala Glu Glu Glu Glu Leu Glu Ala Thr 440 Pro Glu Asp Asp Phe Gln Leu Glu Glu Pro Ser Gly Glu Gly Glu Gly -----450 455 Glu Gly Glu Gly Glu Gly Glu Gly Glu Ala Leu Val Ala Val 475 Pro Val Val Ala Glu Pro Val Glu Val Val Thr Pro Ala Gln Pro Val Tys Pro Met Val Ala Pro Thr Ala Asp Glu Thr Leu Phe Val Asp Ile 500 Leu Asp Asn Asp Leu Thr Tyr Ala Asp\Ile Thr Ser Phe Glu Pro Leu 520 he Lys Gln Ile Leu Lys Asp Pro Asp Ala Gly Glu Ala Val Thr Val 540 Pro Ser Lys Glu Ala Pro Val Gln Val Pro\Val Ala Val Gly Pro Ala eln Glu Val Pro Thr Glu Glu Leu Met Gln Leu Gln Glu Asp Asp Phe ij 565 570 575 Glu Leu Glu Gly Thr Ala Glu Ala Pro Glu Glu Gly Glu Leu Val Leu Glu Gly Glu Glu Pro Thr Glu Glu Glu Pro Atg Glu Gly Glu Pro 600 Thr Glu Gly Glu Val Pro Glu Glu Glu Leu Glu Ala Thr Pro Glu Asp 610 615 Asp Phe Glu Leu Glu Glu Pro Thr Gly Glu Glu Val Glu Glu Thr Val 625 630 635 640 Glu Gly Glu Glu Thr Ala Glu Gly Glu Val Glu Val Pro Ala 655 Glu Val Glu Glu Val Glu Val Pro Ala Glu Val Glu Glu Val Glu

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670 Glu Val Pro Glu Glu Val Glu Glu Val Pro Ala Glu Val Glu Glu Val Glu Glu Val Pro Glu Glu Val Glu Glu Val Pro Glu Glu Val Glu Glu 700 Val Pro Glu Glu Val Glu Glu Val Glu Glu Val Glu Val Glu 715 Glu Val Glu Glu Val Glu Val Pro Ala Val Glu Val Glu Val Pro 730 Ala Val Val Glu Glu Val Pro Clu Glu Val Glu Glu Glu Glu Glu Glu Glu Pro Val Glu Glu Asp Val Leu Gln Leu Val Ile Pro Ser Glu Glu Asp Ile Gln Leu Asp Lys Pro Lys Lys Asp Glu Leu Gly Gly Ile Leu Ser Ile Ile Asp Met His Tyr Gln Asp Val Pro Lys 785 ζΠ Giù Phe Met Glu Glu Glu Glu Glu Thr Ala Val Tyr Pro Leu Lys Pro Glin Asp Phe Ala Lys Glu Asp Ser Gln Ser Thr Glu Trp Leu Thr Phe 830 Ile Gln Gly Leu Glu Gly Asp Trp Glu Arg Leu Glu Val Ser Leu Asn Ala Arg Glu Arg Trp Met Glu Gln Arg Asn Lys Glu Trp Ala Gly []850 Trp Leu Arg Leu Ile Glu Asn Lys Trp Ser Glu Tyr Ser Gln Ile Ser Thr Lys Gly Lys Asp Pro Ala Gly Leu Arg Lys Arg Glu Trp Ser Asp Glu Lys Trp Lys Lys Trp Phe Lys Ala Glu Val Lys Ser\Gln Ile Asp Ser His Leu Lys Lys Trp Met Asn Asp Thr His Ser Asn Leu Phe Lys 910 925 Ile Leu Val Lys Asp Met Ser Gln Phe Glu Asn Lys Lys Thr Lys Glu Trp Leu Met Asn His Trp Lys Lys Asn Glu Arg Gly Tyr Gly der Glu

Ser Phe Glu Val Met Thr Thr Ser Lys Leu Leu Asn Val Ala Lys Ser 970

Arg Glu Trp Tyr Arg Ala Asn Pro Asn Ile Asn Arg Glu Arg Arg Glu 980 985 985

Leu Met Lys Trp Phe Leu Leu Lys Glu Asn Glu Tyr Leu Gly Gln Arg 1000

Met Glu Lys Met Asp Ser Leu Glu Lys Ser

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